

## DEPARTMENT OF INDUSTRY, SCIENCE, ENERGY AND RESOURCES

MS21-001201

To: Minister for Energy and Emissions Reduction (For Information)

**RELEASE OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE SIXTH ASSESSMENT REPORT ON CLIMATE SCIENCE**

<b>Recommendation:</b>			
1. That you note the planned release of the Intergovernmental Panel on Climate Change (IPCC) report, <i>AR6 Climate Change 2021: The Physical Science Basis Summary for Policymakers</i> at 6pm 9 August 2021, updated talking points ( <b>Attachment A</b> ) and media handling strategy ( <b>Attachment B</b> ).			
			<b>Noted / Please discuss</b>
<b>Minister:</b>		Date:	
<b>Comments:</b>			
<b>Clearing Officer:</b> Sent 09/08/2021	Matt Searson	A/g General Manager, National Inventory Systems and International Reporting Branch	Ph: s22  s2
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**Key Points:**

1. The IPCC's Sixth Assessment Report (AR6), *Climate Change 2021: The Physical Science Basis Summary for Policymakers* (SPM) is planned for release on 9 August 2021 at 6pm Canberra time (**Attachment C**), with the report's chapters to follow at a later date.
  - a. The report provides an update of the latest climate science, including the rates, causes and possible trajectories of global warming and other changes to the climate system. (MS21-000951 refers)
  - b. The SPM was approved line by line in an IPCC member government approval session from 26 July to 6 August 2021. Headline statements are at **Attachment D**.
  - c. Fact sheets containing regional climate science information from the report will be released with the SPM, including one on Australasia.
2. It is the Department's view that the report provides a detailed, balanced and transparent assessment that addresses Australia's comments submitted during the final government review (MS21-000810 refers).
3. The report is expected to attract significant media attention and intensify calls for more ambitious climate targets, such as net zero emissions by 2050 or earlier.
  - a. The updated handling strategy at **Attachment B** incorporates key outcomes and revised talking points (**Attachment A**) that will continue to be updated as required.

- b. The report, along with forthcoming IPCC assessments on adaptation (February 2022), mitigation (March 2022) and a synthesis (Sept 2022), will inform the 2023 Paris Agreement global stocktake of progress toward the Agreement's goals.
4. Key messages from the report's SPM include:
- a. It is unequivocal that human influence has warmed the atmosphere, ocean and land (A.1).
- i. This is the IPCC's strongest statement on human influence to date, and builds on a similar finding in its Fifth Assessment Report in 2013 which found that human influence was 'clear'.
- b. Even under the lowest emissions scenario, it is *more likely than not* (over 50 per cent) that 1.5°C will be exceeded in the near term (2021 – 2040).
- i. With the likelihood of crossing 1.5°C in the near term increasing to *very likely* (90 – 100 per cent) in highest emissions scenarios. (B.1.3).
- ii. Under the very low emissions scenario, temperature would peak at 1.6°C before returning to 1.5° by 2100.
- c. The probability that global warming of 2°C will be exceeded in the mid-term (2041-2060) varies depending on future emissions, and is *more likely than not* (over 50 per cent) in an intermediate emissions scenario, with increasing likelihood for higher emissions scenarios (B.1.2).
- d. From a physical science perspective, limiting human-induced global warming to a specific level requires reaching at least net zero CO<sub>2</sub> emissions, along with strong reductions in other greenhouse gas emissions (D.1).
- e. Australia is referenced in the context of projections for more intense and frequent heavy precipitation events and drought (C.2.3). Another finding that attributes increased fire weather to human influence on all inhabited continents, includes Australia (A.3.2).

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## Sensitivities and Handling

7. The SPM reports that global warming of 1.5°C is expected to be reached in the near term (2021-2040).
  - a. Stakeholders may interpret the finding to suggest that warming has already exceeded 1.5°C or is likely to be exceeded in early to mid-2020s.
    - i. The IPCC defines a crossing point as the period when the global temperature increase, averaged across a 20 year period, exceeds a specified temperature threshold. The SPM reports that surface temperature in 2001-2020 was 0.99 [0.84-1.10]°C higher than 1850-1900 (A.1.2).
    - b. Stakeholders may compare this finding to a similar finding in IPCC's *Special Report on Global Warming of 1.5°C* (SR1.5, 2018) and infer that 1.5°C will be crossed earlier than expected or that warming is accelerating beyond previous estimates. Our understanding is that this is not the case.
      - i. SR1.5 reported that warming was *likely* to reach 1.5°C between 2030 and 2052 if warming was held to 2017 warming rates. The AR6 notes that all scenarios show the warming rate increasing after 2017 and uses these projections to estimate the crossing time.
      - ii. The SPM notes that these findings are not comparable due to this methodology improvement, as well as new datasets that increases the estimate of historical warming in AR6 by around 0.1°C. (B.1.3, A.1.2)
      - iii. These methodology improvements do not significantly alter the IPCC's reported global carbon budgets for holding temperature increase to 1.5°C or other temperature levels over the longer term (D.1.3).
8. The SPM reaffirms the importance of reducing CO<sub>2</sub> emissions to net zero for stabilising warming, which is not the case for all greenhouse gases. (D.1)
  - a. The report does not answer the question on whether reaching 1.5°C global warming in the "near term" (2021-2040) has implications for the timeframe to reach net zero CO<sub>2</sub> required to hold temperature to 1.5°C (currently "around 2050") over the longer term. This issue will be covered in the upcoming IPCC AR6 *Mitigation of Climate Change* scheduled for release in March 2022.
9. The SPM identifies the role of methane emissions reductions while demonstrating that, in the long term, temperatures can be stabilised with positive, although declining, methane emissions (SPM Figure 4).

- a. Stakeholders might use the report's release as an opportunity to amplify calls for near term action to reduce methane emissions, noting its greater warming impact compared to carbon dioxide on a tonne for tonne basis, over a 100 year time horizon.
- b. The SPM finds "strong, rapid and sustained reductions" in methane emissions would also limit the warming effect of declining aerosol pollution and would improve air quality (D.1). Aerosol emissions are expected to decline because of decreasing burning of fossil fuels, as well as pollution controls.

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**Consultation: YES**

11. International Climate and Technology Division

**ATTACHMENTS**

- A:** Talking Points– Release of *AR6: The Physical Science Basis*
- B:** Handling Strategy – Release of *AR6: The Physical Science Basis*
- C:** Climate Change 2021: The Physical Science Basis Summary for Policymakers  
**(embargoed until 6pm Monday 9 August)**
- D:** Headline Statements – Climate Change 2021: *The Physical Science Basis*